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SOCIETY AFFAIRS

AND FINALLY A CHANGE

At the Society's 1934 meeting in Chicago the Council adopted a recommendation that "the Secretary should prepare and distribute a newsletter to the members of the Society." The first issue consisting of 6 mimeographed pages appeared in February, 1935.

For the past 24 years the newsletter has been prepared in the Secretary's office and distributed on a more or less regular basis four to six times a year. It has progressed from a 6-page mimeographed report mailed to 850 members to a printed document called *Bacteriological News* that sometimes reaches 48 pages and has a press run of 6,000 copies. Basically, however, the general content and function of our newsletter has changed little since 1935.

This issue represents one break with tradition—it is the first to be prepared outside the Secretary's office. In accordance with the action of the Council at the 1958 meeting, responsibility for the publication of *Bacteriological News* was transferred to the Executive Secretary just as soon as his office was established. The August issue was the last to be prepared by your elected Secretary. In the future, therefore, news items, reports from local branches, and anything else submitted for publication in *Bacteriological News* should be directed to S.A.B. Headquarters, 19875 Mack Avenue, Detroit 36, Michigan.

E. M. Foster
Secretary

A CHANGE TO WHAT?

Dr. Foster submitted the foregoing with a note indicating that it was his "swan song" and should be printed at the beginning of this issue so that everyone would understand that what followed belonged to the new Editor. It is not entirely clear whether this is an act of graciousness or an act of defense on the part of the former Editor. Needless to say, the responsibility of producing *Bacteriological News* is big, and the Society owes much to Dr. Foster for the high standards he has set. He most certainly deserves a rest from this time-consuming task but our readers will certainly miss his understanding presentation of Society affairs as well as his homey and oft times witty style of presentation.

The production of *Bacteriological News* is for the most part a job of assembling and organizing news-worthy material. It is mostly a collection of items that you as members send to the Editor, plus certain items of official business and action. So, if there is something that you do not find in

the *News* and you think it should have been included, remember that it probably would have appeared if you had sent it in. What all this amounts to is an appeal to Officers of the Society, Branch Officers and all members to send in all items of possible interest to microbiologists and thereby give the Editor some much needed assistance in his efforts to maintain the standards of his predecessor.

R. W. Sarber
Editor

1960 GENERAL MEETING PLANS

The Eastern Pennsylvania Chapter will be host at the 60th General Meeting of the Society in Philadelphia on May 1 through 5, 1960. The Chairman of the local committee is Dr. Harry E. Morton, Department of Microbiology, University of Pennsylvania, Philadelphia. Local arrangements are well along in their preparation and the local committees are enthusiastically working to make the meeting the largest and best in the history of the Society.

Officers and Chairmen of the local committees on arrangements are:

Chairman, Harry E. Morton
Vice-Chairman and Treasurer, Carl F. Clancy
Commercial Exhibits, Theodore G. Anderson
Scientific Exhibits, A. R. DeLong
Sunday Night Mixer, Amedeo Bondi, Jr.
Registration, Paul F. Smith
Session Rooms, L. Joe Berry
Publicity and "Incubator", Ned B. Williams
Special Meals, Ruth E. Miller
President's Reception and Banquet, Earle H. Spaulding
Hotel Reservations, Daniel J. O'Kane
Information, Evelyn A. Dwyer
Hostess, Bettylee Hampil
Tours, Morton Klein

Headquarters will be in the Bellevue-Stratford Hotel although meetings will be held in the Bellevue-Stratford and the nearby Adelphia Hotel.

The Sunday Night Mixer and Banquet will be held in the Bellevue-Stratford Hotel.

The commercial exhibits will be held in the Bellevue-Stratford Hotel. Facilities have been provided for 70 exhibits which exceed those of any previous meeting.

A very adequate number of sleeping rooms have been reserved in 6 downtown hotels which are convenient to the hotels in which meetings will be held. Details for making reservations will be announced at a later date.

The Hostess Committee is planning a varied and interesting program for entertainment of visiting wives and distaff members of the Society.

The Committee for Special Meals has available a wide selection of rooms for special events. Groups planning special breakfasts, luncheons, dinners, or cocktail hours should communicate with the Committee as early as possible.

Details of entertainment are not being released by the local committees. They wish to point out that Philadelphia is not the "sleepy city" that many visitors have experienced in years past. The State Supreme Court has recently ruled unconstitutional Pennsylvania's last censorship law on entertainment.

The Committee on Information expects to be well stocked with all kinds of information. The Information and Registration Booths will be open on Saturday afternoon and all day Sunday for your convenience.

The Committee on Tours will have a wide selection of tours of historical, cultural, and scientific interest available to members and their guests. Plan to come early, bring the family, and spend Saturday or Sunday visiting the National Shrines or places which interest you the most.

There are many old and quaint churches in downtown Philadelphia. For those who may be interested in worshiping in churches where the founders of our country worshiped, we list the following:

Old Swedes Church, Gloria Dei (Episcopal) at Swanson Street near Front and Christian Streets, is the oldest church in Pennsylvania and the oldest in continuous service in the United States. It was founded in 1642 and built in 1700. The cornerstone was laid in 1698 in the presence of William Penn. It is now a National Historic Shrine. Its surrounding courtyard is very interesting.

St. George's Methodist Church established in 1767 at 235 North 4th Street, is the oldest Methodist Church edifice in continuous service in the world. Adjoining is the Methodist Historical Center.

Old Pine Street Presbyterian Church, built in 1768 at Pine and Fourth Street, is the only Presbyterian Church preserved from the Colonial Period.

Old St. Joseph's Church is the oldest Roman Catholic Parish in Philadelphia. The original church was built in 1733 but has been rebuilt and enlarged several times. It is located in Willing's Alley off Walnut Street, between Third and Fourth Streets.

Christ Church was founded in 1695 and the present building was constructed in 1727. It is located on Second Street a short distance north of Market Street. Here worshiped George Washington, John Adams, Benjamin Franklin, Robert Morris, Betsy Ross and Lafayette. Christ Church

burial ground is located at Fifth and Arch Streets and has been in existence since 1730. The graves of Benjamin and Deborah Franklin may be seen from the Arch Street sidewalk.

St. Peter's Episcopal Church, founded in 1761, is located at Third and Pine Streets. The pews which George Washington and Benjamin Franklin had in this church are in use today.

St. Michael's and Zion Evangelical Lutheran Church on Franklin Street above Race Street was founded in 1742; the present church building was erected in 1870.

The Meeting House of the Society of Friends (Quakers) is located at Fourth and Arch Streets. The ground was deeded by William Penn in 1701 and a large number of the victims of the yellow fever epidemic of 1793 are interred here. The present building has been in use since 1805. It is the oldest Friends building in Philadelphia and the largest in the world.

The First Baptist Church was founded in 1698 and is now located at Seventeenth and Sansom Streets. Open daily, except Saturday, from 9 a.m. to 5 p.m.

Congregation Mikveh Israel, founded in 1740, is Philadelphia's oldest Jewish congregation. It now occupies a beautiful synagogue at Broad and York Streets. The cemetery at Eighth and Spruce Streets has been designated a unit of the Independence Historical Park Project.

Make your plans now to attend the 1960 meetings in the City of Brotherly Love. More details will appear in the January issue of *Bacteriological News*.

PROGRAM DEADLINES FOR 1960 MEETING

Abstract blanks for submission of papers are included with this issue of the *News*. **Abstracts must reach the Chairman of the Program Committee by Friday, January 8, 1960**, to be considered for the program. Attention is called to these requirements: (1) at least one of the authors of a paper must be a member of the Society, apart from persons giving invited papers; (2) an individual may present only one paper; (3) the same individual may appear as an author on additional papers but only if another among the named authors is also a member of the Society.

It is anticipated that a larger number of original papers can be accommodated at the 1960 Annual Meeting than in 1959, owing to the provision of additional facilities by the Eastern Pennsylvania Chapter.

Round Tables can be announced in the Program if the notices reach the Chairman of the Program Committee by January 15, 1960. Round Tables can be organized after this date but it will not be possible to announce them in the program. They can be listed in the April issue of *Bacteriological News*, however, if the notices reach the **Executive Secretary before February 15, 1960**.

PROGRAMS AT OUR ANNUAL MEETING

From questions that often are directed to the Program Chairman, one may conclude that an understanding of the mechanics of the Program Committee is not widely shared. Some account of our present procedures may, consequently, be useful and may encourage individual members of the Society to express themselves further.

Our Society is presently constituted of 4 Divisions, namely, the Division of Agricultural and Industrial Bacteriology; the Division of General Bacteriology; the Division of Medical Bacteriology, Immunology, and Virology; the Division of Bacterial Physiology. These 4 Divisions are headed by persons who have been elected, ordinarily three years before their Chairmanship, as "Secretaries" on Tuesday afternoon at the Annual Meeting just before the start of the afternoon's Session. One year later, these individuals become Vice-Chairman and usually, after another year, the Chairman.

Each Divisional Chairman has the primary responsibility of evaluating all abstracts of original papers which members address to his Division, or of nondesignated abstracts that the Program Chairman refers to him in view of the content of the abstract. In addition to this, the Divisional Chairman suggests one evening Symposium that, in his opinion, has not only a general bearing on the interests of his particular Division but is of interest to all microbiologists. One of his various suggestions for the titles of a Symposium is adopted by a coordinating committee including the President. Beyond this, the Chairman of the Medical Division usually suggests and completes two Symposia, one dealing with virology and the other with bacteriology or immunology.

The judgment of the Divisional Chairman is therefore exercised in the interests of all the members whose chiefest affiliation is in the Chairman's field. Coordinating the activities of these 4 persons is the Program Chairman and his Vice-Chairman. The Program Chairman assesses the space available at each coming General Meeting, arranges with the officers of the Society for their space requirements and any expressed wishes with regard to the holding of major functions. The times when particular rooms are unavailable is taken into account, and sessions of fixed length are assigned to each of the available sessions rooms. The total number of abstracts that can be handled in a given year is therefore determined by considerations of space, and the difference may be great indeed according to whether more than one hotel in a city is available in a given year. We realize full well the inconvenience to members in being spread over two separate structures, but we are certain that members do want the maximum number of good papers presented. It is our intention to do our best to make the use of plural

structures equitable for all 4 divisions. In Philadelphia, space is more ample than it was in St. Louis last year, and various new arrangements will be made there.

Regarding the topics of the (presently 5) Interdivisional Symposia that are given on Monday and Wednesday evenings, any member at all may direct suggestions to his own Divisional Chairman for evaluation by the latter. Relevant suggestions will go to the Program Chairman, who in turn will address them to the President. As it happens, such suggestions must come in to the Divisional Chairman within 5 weeks of the conclusion of a given Annual Meeting for full consideration, and consequently suggestions for 1961 are the only ones presently open so far as evening Symposia are concerned.

There is another area in which members can make suggestions, and such suggestions may indeed lead to the creation of new elements in our customary programs. Symposia that are of interest chiefly to smaller groups than the entire membership can sometimes be arranged (according to considerations of available space) in a daytime session in a regular Sessions Room as opposed to the smaller accommodations that are designed for unofficial program meetings held in Round Tables rooms. Suggestions along this line may deal with subjects that require a panel to answer, or they may call for several speakers whose work and information, presented in sequence, would be of benefit to the Division in question.

Complaints are sometimes addressed to the Program Chairman, stating that the Society is "not doing this or that", or that "the Society is following but not leading in such and such an area," or that "the Society is not taking care of such and such interests of its members." One recent letter had to do with the idea that the national society was forgetful of the realm of diagnostic bacteriology in its Annual Meetings.

Are these charges true? If there are areas that could be improved, please let us know. If your own suggestion is not utilized in a given following year, your confidence must remain that due weight has been given to the suggestion, and that it has been balanced against space requirements for Annual Meetings with regard to original papers, and other topics that crowd in upon it; it is possible that the idea may be utilized in a following year. Only suggestions from the Society's members can help us to create the new instruments of communication at each Annual Meeting.

Meanwhile, do not take lightly your responsibility to vote for effective Divisional Chairmen when your Division holds its election once each year.

Merrill W. Chase
Program Chairman

REPORT OF SOCIETY REPRESENTATIVES TO NATIONAL COMMISSION ON TEACHER EDUCATION AND PROFESSIONAL STANDARDS

Persons interested in all phases of elementary and secondary school teacher training met June 24-26, 1959 at The University of Kansas in The Kansas Conference. This gathering, sponsored by the National Commission on Teacher Education and Professional Standards (TEPS), had as its theme "The Education of Teachers: Curriculum Programs." A similar conference held at Bowling Green, Ohio last year was reported in *Bacteriological News* (November, 1958). The objective of the meeting was to bring together professional educators and representatives of academic faculties in the hope that better coordination between the groups might be achieved.

A total of 1085 delegates attended. These comprised primary and secondary school teachers and administrators, college teachers, representatives of scientific and non-scientific professional societies, members of school boards, representatives of government agencies and others. The Society of American Bacteriologists was represented by Dr. David Paretsky of the University of Kansas and Dr. Alfred F. Borg of Kansas State University, Manhattan.

Conferees were assigned to groups of 20 to 30 people by dividing the participants into two "Sets" which were further subdivided into study groups.

On Wednesday, June 24, Set 1 divided into 30 groups, discussed general problems and objectives of teacher training of both elementary and secondary schools. There were formal general presentations of *Undergraduate Teacher Education Programs of Selected Institutions*. These presentations were followed by general discussions in each group of the set. It is of interest to us as bacteriologists to recognize and study both the Garrett Report and the American Institute of Physics Reports of the American Association for the Advancement of Science subcommittee on teacher selection. The group endorsed the Garrett report insofar as training for high school teachers of Biology is concerned. The modified Garrett Report prepared by the American Association of Physics Teachers and the American Institute of Physics concerned with the preparation of high school teachers of science and mathematics was also endorsed with the exception of its recommendations for teachers of Biology. It was the committee's feeling that insufficient training in chemistry and mathematics was a drawback to the preparation of secondary school teachers in science and mathematics.

The report of Dr. Millard Seeley of the University of Arizona was of such interest that it is included in this report:

"The Evolution of a Science-Education Improvement Program at the University of Arizona (David L. Patrick): In the summer of 1956 Dr. Richard A. Harvill, president of the University of Arizona created a Committee on Science Education and appointed as its members faculty representatives from the College of Education, the College of Engineering, and the Departments of Botany, Chemistry, Mathematics, Physics and Zoology. The primary duty of the Committee was and is to determine how the University can aid in the improvement of science teaching at all levels of instruction.

The Committee soon recognized that suggested methods for science-teaching improvement depend principally upon the individual's own concept of the function of science in the educational process. Although there was a lack of agreement on the function of science in education, the Committee came to agree upon a fundamental philosophy of science education.

Simply stated, we believe that man's search for better understanding of himself and of nature should not omit evaluation of the impact of each upon the other. We must not fail to recognize that science is as much a part of man's culture as the arts, letters and religion. We believe that education must include the study of science, not merely as a catalogue of factual knowledge, but also as an integral part of mankind's intellectual heritage.

This point of view is not always apparent in the course of titles of our current curriculum, nor is it presented in any of the conventional science or philosophy courses. Our program represents an attempt to present science to the prospective teacher as a creative process and cultural endeavor—as well as a powerful and practical tool—through a minimum of specially designed courses and seminars.

Design of the Curriculum

In explaining the design of our curriculum for the improvement of science teaching, it would be unfair to give the impression that each part of the program to be described has been tested and approved by us. It would be equally unfair to discuss only those features which have been put into practice. I shall attempt to distinguish the in-practice from the in-theory portions.

Much attention has been focused on the shortage of science teachers in secondary schools. While this shortage may be a numerical one, it is our belief that the situation will not be improved by the mere training of more science teachers along traditional lines. It has become alarmingly evident that the acute need is for a science teacher who can stimulate and guide students as well as present material and answer questions. The need is for teachers who have confidence in their ability, awareness of their limitations and, above all, who

can continue the lifetime educational process through independent study.

We are convinced from our experiences with the National Science Foundation Summer Institutes for High School Science Teachers and from continuing personal contact with secondary-school teachers that the existing curricula neither attracts sufficient numbers of prospective teachers nor adequately prepare the few enrollees for the task that confronts them. This opinion has been formed through seminars and discussion groups and through personal experience in teaching a high-school class in chemistry for one year. In addition, the author met with high-school chemistry teachers three hours per week during the year preceding his high-school teaching experience in order to evaluate the worth of this method of presenting science to the high-school teachers and students.

Program Objectives

Our program has as its objectives the development of the following attributes in the teacher:

- (1) understanding of the basic concepts, aims, and limitations of science;
- (2) awareness of the unity of science—the interrelations of the various disciplines that often appear distinct;
- (3) the habit of independent study and the capability to pursue this study with profit; and
- (4) an appreciation of science as one of the humanities and realization that science is a creative process.

To attain these objectives, a curriculum has been devised, the essential features of which are as follows:

1. Addition of special introductory courses such as "The Foundations of Physical Science," "Introduction to the Biological Sciences," and "Introduction to Mathematics." These courses are designed to present the creative, cultural, and practical aspects of science.
2. The attainment of considerable depth of understanding in the biological and physical sciences and in mathematics by combining new and existing courses and accenting understanding of fundamental concept rather than memorization of facts.
3. A unifying senior course, "The Development of Science," in which topics explored include the evolution of science from Aristotle to the present; the importance of known scientific factors in the acceptance of new theories; the relationship between facts and theories; the validation of theories; the limitations of science; the tortuous path preceding the emergence of new scientific concepts; the relationship of these concepts to the prevailing intellectual climate; and the impact of new concepts on our present world view.

4. Small classes and the use of seminars and research for encouraging independent study.

Curriculum for the B.S. in Science Teaching

The curriculum for the degree of Bachelor of Science in Science Teaching is experimental in nature and calls for close supervision and guidance of the student's choice of electives. We believe that it is essential to bring into the guidance and counseling process scientists from the student's major field and we have a plan in cooperation with the College of Education to carry out this program of guidance and counseling, beginning at an early stage and continuing on throughout the prospective teacher's stay in college. We hope that with supervision the prospective teacher will be able to take advantage of the flexibility of our program and to fit the course work to his aims and preferences.

Course Sequence

Freshman Year. Course requirements and units of credit are as follows: English composition, 6; elementary psychology (or foreign language), 3 or 4; social science elective (or foreign language), 3 or 4; introduction to mathematics, 8; foundations of physical science, 8; physical education, 2; and military science (men), 2. The total number of units is 32 or 34 for men and 30 or 32 for women.

Sophomore Year. Course requirements and units of credit are as follows: humanities, 8; foreign language (or social science elective), 4 or 3; foreign language (or elementary psychology), 4 or 3; introduction to biological science or mathematical analysis, 8; principles of chemistry or physics, 8; military science (men) and physical education (women), 2. The total number of units is 34 or 32.

Junior Year. Course requirements and units of credit are as follows: foreign language or elective, 8 or 6; educational psychology, 3; education—the high school, 3; school and community health, 3; education—high school methods, 3; principles of physics (or chemistry or genetics), 4; principles of physics (or chemistry or biology elective), 4; science elective, 6 or 8. The total number of units is 32 or 36.

Senior Year. Course requirements and units of credit are as follows: development of science, 3; education—practice teaching, 6; education—tests and measurements, 3; education—history of, 3; political science—constitutions, 3; science elective, 6 or 8; elective, 6 or 8. The total number of units is 30 or 34.

By the beginning of the sophomore year the student should specify a choice of field of major interest among biology, chemistry, mathematics or physics. Those selecting biology take introduction to biological science and principles of chemistry in the sophomore year. Those selecting chemistry take principles of chemistry, and choose

between mathematical analysis and introduction to biological science. Those selecting mathematics or physics take mathematical analysis and principles of physics. All students will be urged to take part of their elective units in science in fields outside their major interest in order to provide a more rounded background. The student will generally be required to take at least 9 units in the field of his major interest beyond the courses in the sophomore year.

The amount of foreign language elected will depend upon the student's high-school preparation in this area.

In order to qualify for a permanent secondary school teaching certificate in Arizona, the student must complete 30 units of graduate work, including 6 units of graduate work in education. A fifth year of work leading to an M.S. degree in Science Teaching could readily follow this proposed B. S. curriculum, with the graduate courses in the field being drawn primarily from the following list:

Suggested Electives

Biological Sciences. Bacteriology 8; plant ecology, 4; plant physiology, 4; plant anatomy, 4; taxonomy, 4; mammalian anatomy, 3; invertebrate zoology, 4; mammalogy, 4; evolution, 2; research.

Chemistry. Organic chemistry, 8; elementary physical chemistry, 4; physical chemistry laboratory, 2; analytical chemistry, 4; advanced inorganic chemistry, 3; the chemical bond, 3; biochemistry, 8; research.

Mathematics. Theory of equations, 3; statistics, 3 to 6; projective geometry, 3 to 6; fundamental concepts of geometry, 3; introduction to analysis, 3; introduction to mathematical logic, 3 to 6; probability, 3; selections from modern abstract algebra, 3; combinatorial topology, 3; history of mathematics, 3; theory of numbers, 3; theory of games, 3; foundations of mathematics, 3 to 6; matrix analysis, 3.

Physics. Electrical measurements, 3; electronics, 3; thermodynamics and heat, 3; thermodynamics and heat laboratory, 1; optics, 3; optics laboratory, 1; modern physics, 3 to 6; research.

For a well-prepared high school science teacher, the M. S. program, with emphasis on further courses and research in science, would be an essential part of his training.

Group Units Required for the B.S. in Science Teaching

Group 1. English composition, 6.

Group 2. Humanities, 8.

Group 3. Foreign language (proficiency at the 16-unit level), 8 to 16.

Group 4. Social science (psychology, political science, elective), 9.

Group 5. For men, military science, 4 and physical education, 2; for women, physical education, 4.

Group 6. Science (total of 52 units). All options require the following: introduction to mathematics, foundations of physical science, and the development of science, 19 units; science electives, 9-13. Biology option requires in addition to the above, introduction to biological science, 8; genetics, 4; principles of chemistry, 8. Chemistry option requires in addition to the above, principles of chemistry, 8; principles of physics, 8; and an additional 8 units in mathematics or biological sciences. Physics and mathematics options require in addition to the above, principles of chemistry, 8; principles of physics, 8; and an additional 8 units in mathematics.

Group 7. Education (health education, 3; education, 18), 21.

The total group units required are 108 to 118; the total elective units are 7 to 17; and the total units required for graduation are 125.

Conclusion

During the year in which the author has served as chairman of the Committee on Science Education, he has come to believe strongly in the necessity for stressing the cultural and conceptual aspects of science in any program directed toward the improvement of science teaching. The fact that this need was recognized almost immediately upon formation of our Committee in 1956 demonstrates that this problem has been approached on fundamental terms and in a manner which has never at any time deviated from the basic philosophy we still believe to be sound."

One of the general agreements at the Conference was that satisfactory teaching includes both a solid foundation in the subject matter being taught and the ability to deliver this information in a stimulating manner and with accuracy to the student. It was felt that a teacher should receive a general education encompassing a liberal arts type program including the natural and physical sciences, mathematics and humanities, as well as courses in education including educational methods and other types of schools of education programs. A need was felt by many for a specialization on the part of teachers being trained for high school work. A good deal of discussion centered on a five year program. Prominent in the discussions was the question as to who would teach the specialized courses to the teacher candidates. There was strong opinion that the regular academic departments teach the courses for which they are normally responsible. This would mean that teachers would take courses in biology in the academic Biology Departments, chemistry in the Chemistry Department, educational psychology in the Psychology Department, etc. Substantially all

agreed that teachers should possess the equivalent of a major in an academic field. The formula agreed on at Bowling Green last year seemed to be generally satisfactory. This formula suggests that students preparing to teach should take approximately 40 per cent of undergraduate credit hours in general education (*i.e.*, general background), 40 per cent in the area of concentration (*i.e.*, the major) and 20 per cent in professional education. There was a general feeling that standards for teacher admissions should be raised. It was felt that by an increase in standards of teacher preparation a more competent and professional group of teachers would result with better professional and economic status.

Unfortunately, no group we know of concerned itself with the problem of whether bacteriology should be taught in secondary schools. Indeed, we doubt that this came up at all. This may point to a place where the Society could exercise some leadership. Perhaps we should give some attention to the question of whether microbiology can be useful in the presentation of biology in secondary schools.

It is not clear just how much the Society or the Conference gains from our being represented. Our specific subject matter is not discussed, but there is ample opportunity to express the general outlook of the scientist and to contribute to discussions on basic preparation in the sciences. In some ways the Kansas Conference lacked impact. Sharp differences of opinion were relatively rare, and much of the controversial material which stimulates sharp thinking was handled at the Bowling Green Conference.

Criticisms leveled by academicians at "professional educationists" have had great influence on the position assumed by those responsible for teacher training at the Kansas Conference; this is most noticeable in the fields of mathematics and science. Persons talking about problems of teacher training almost invariably drew their illustrations from these areas, so much so that the humanists present periodically raised a protest against undue bias towards science and mathematics. So large a conference is bound to be somewhat amorphous. Its true worth will probably never be known, since it will be reflected more in changes of attitude than in immediate change in academic procedures related to teacher training.

EMPLOYMENT BUREAU CHANGES REGULATIONS

The changes in location and administration of the Employment Bureau were reported in *Bacteriological News*, August, 1959. Every effort will be made to continue the high quality of service so long enjoyed by registrant and employer alike while the Bureau was under the direction of Dr. Milton Foter.

In the past, the Bureau has been fortunate in having been operated primarily on a volunteer basis, but like so many of the Society's functions, this operation has grown to a point where time and personnel limitations make this method of operation no longer possible. Now that all operations of the Bureau are being performed by salaried personnel, every effort must be made to operate as efficiently as possible so that the quality of service which our members have the right to expect can be maintained.

Even on a volunteer basis, the Bureau has found it increasingly difficult to operate within its income, and indeed, was not able to do so last year. It is easy to see that this problem becomes even more acute now that volunteer operation is no longer possible. This, then, leaves but two ways to proceed if the Bureau is to continue to exist. The Bureau can be subsidized through existing or increased membership dues, or steps can be taken to make it self-supporting. It is not deemed advisable at this time to divert dues to the support of this Society function because, while it is an important part of the Society's services to its members, at the same time it serves only a small portion of the membership.

After much careful consideration of the financial needs of the Bureau, and study of the Advisory Committee's recommendations, certain changes have been adopted that should make possible continued successful operation of the Bureau on a self-supporting basis. Accordingly, the following changes are immediately effective:

Registration fee

Remains at \$5.00 but is not refundable nor deductible from commissions due the Bureau.

Registration period

Limited to two years. At the end of two years you may reregister for an additional \$5.00.

Reregistration fee

Remains at \$3.00 if you are dropped for non-compliance with Bureau regulations.

Commission

Five per cent of the first three months salary for both S.A.B. and non-S.A.B. members.

It can be seen that these changes are not drastic, the main differences being the limitation on registration and the equalizing of commissions. The total commission is equivalent to five dollars plus 15 per cent of one month's salary as compared with the 50 to 75 per cent fee of most commercial employment agencies. This is even more of a bargain when you consider that the Bureau has been told by employers that its service and the quality of its

registrants far exceed those of commercial agencies. The two year limit on registration is intended to eliminate registrants who are merely "shopping" and have no serious intent to change positions. Such individuals are, we believe, unfair to persons seriously seeking employment, and are embarrassing to the Bureau because more often than not they do not respond to employers' letters of inquiry. The Bureau feels that it is its responsibility to submit to employers, registrants who are serious in their intent. An active registry is the Bureau's best recommendation!

All present registrants have been notified of the

changes in Bureau regulations and given the opportunity of a refund of their registration fees. While many registrants responded with the information that they had already found positions or were not interested in making a change—thus revealing that they had not lived up to Bureau regulations requiring that files be kept current—most registrants have expressed a willingness to comply with the new regulations. This latter response is most encouraging and the Bureau pledges that every effort will be made to serve both registrants and prospective employers by every possible means.

NEWS AND ANNOUNCEMENTS

SECOND NOTICE

Call for Eli Lilly Award Nominations

Nominations for the 1960 Eli Lilly and Company Award in Bacteriology and Immunology are invited. The award is made annually to a young microbiologist who has performed outstanding research in bacteriology or immunology. To be eligible the nominee shall be less than 35 years of age on April 30, 1960 (birth date after April 30, 1925).

Pertinent portions of the rules governing the award are quoted below: "The Eli Lilly and Company Research Award is made for the purpose of stimulating fundamental research in bacteriology and immunology in the United States and Canada by a young man or woman working in a non-commercial research or educational institution. The Award consists of \$1,000 and a bronze medal. In addition, the traveling expenses incidental to conferring the medal are paid.

■ "For the purpose of this Award, outstanding research is understood to be that which is of unusual merit for an individual on the threshold of his career. The research is not to be judged in comparison with the work of more mature and experienced workers, and in judging various researches, special consideration shall be given to the independence of thought and the originality shown.

"Nominations for this Award may be sent to the Secretary of the Society of American Bacteriologists by any individual qualified in the field of bacteriology and/or immunology except the members of the Award Committee. No person shall send in more than one nomination. At the time of the nomination the nominee must be actively engaged in the line of research for which the award is to be made."

Nominations in *five copies* shall be accompanied by:

1. Brief biographical sketch of the nominee, including month, day and year of birth.
2. List of publications.
3. Specific reference to the research on which the nomination is based.
4. Supporting letters, if possible. (No reprints or manuscripts should be submitted.)

Neither the nominee nor the nominator need be a member of the S.A.B.

All nominations received by January 1, 1960 will be transmitted to the Nominating Committee, whose duties are "to receive nominations transmitted by the Secretary of the Society of American Bacteriologists and take such steps as may seem to it desirable to secure nominations of others deemed worthy of consideration for the Award. Upon the expiration of the time for the receipt of nominations, the Nominating Committee shall transmit the data on all completed nominations to the chairman of the Award Committee."

"The Award Committee shall reach a decision by March 1st of the year that the award is to be made. The first announcement of the award shall be made at the annual meeting of the Society of American Bacteriologists. The recipient of the Award shall be asked to report on his work at the meeting at which the award is to be made. If, in the opinion of the Award Committee, there is no outstanding eligible nominee, the award may be passed and the fund used for a later award."

Send nominations **not later than January 1, 1960 to:**

E. M. Foster
311 Bacteriology
University of Wisconsin, Madison 6, Wisconsin
Five copies of all materials must be submitted.

NEW SUSTAINING MEMBERS

Members of the Society will be pleased to know that in the period since the last issue of *Bacteriological News* went to press, six firms have joined

the Society of American Bacteriologists' growing list of sustaining members. These new members are:

Anchor Serum Company
Corn States Laboratories, Inc.
Eberbach Corporation
Huntington Laboratories, Inc.
Ortho Research Foundation
Professional Tape Company, Inc.

These additions bring the total number of sustaining members to 92. This increase indicates a response to the appeal made to our members to interest organizations in our Society, and to the efforts of the Membership Committee under the chairmanship of Dr. Donald E. Shay. The Society needs and appreciates the support of its sustaining members and we, in turn, should give them our support.

INTERNATIONAL MEETINGS OF INTEREST TO BACTERIOLOGISTS

With the greatly increased interest in and ease of travel, more and more scientists are attending the international meetings that are growing more numerous each year. The International Organizations Section, General Reference and Bibliography Division, Library of Congress, through a grant from the National Science Foundation, is publishing monthly the *World List of Future International Meetings. Part I* contains meetings in science, technology, medicine and agriculture. All meetings draw on three or more countries. Publication is monthly and is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price \$7.00 per year. The following meetings in 1960 are of interest to microbiologists. (Dates are not complete in some instances. Person to be contacted for information is given.)

Mar. 31-April 1

Symposium on Continuous Culture of Microorganisms. London, Eng. R. Elsworth, Microbiol. Res. Est., Porton, Salisbury, Wilts., England.

Spring 1960

Symposium on Cultural and Metabolic Aspects of Molds. Rome, Italy. G. Sykes, Microbiol. Div., Boots Pure Drugs, Ltd., West Bridgford, Notts., England

April 1960

Symposium on Microbiological Genetics. London, Eng. B. W. Lacey, Westminster Medical School, London, S.W. 1, England

July 10-14

Pan American Tuberculosis Congress. Bahia, Brazil. Fernando D. Gómez, 26 de Marzo, 1065 Montevideo, Uruguay

July 31-Aug. 5

International Photobiological Congress. Copenhagen. Dr. A. Hollaender, National Lab., Oak Ridge, Tenn.

Aug. 14-24

International Congress of Soil Science. Madison, Wis. Dr. L. E. Englebert, Univ. of Wis., Madison, Wis.

Aug. 29-Sept. 3

European Conference on Electron Microscopy. Delft, Neth. Prof. J. B. LePoole, Mijnbouwplein 11, Delft, Neth.

Aug. or Sept.

International Assoc. Milk and Food Sanitarians. Chicago. H. L. Thomasson, Box 437, Shelbyville, Ind.

Sept. 4-9

International Congress of Cell Biology. Paris. Prof. M. Chevrement, 20, rue de Pitteurs, Liège, Belgium

Sept. 5-10

International Symposium on Microbiology of Foods and Beverages. Evian, France. Dr. D. A. Mossel, Catherijnesingel 61, Utrecht, Neth.

1960

International Congress of Medical Laboratory Technologists. Strasbourg. R. J. Lavington, 9 Harley St., London W. 1, Eng.

1960

Symposium on Comparative Physiology of Bacterial and Other Cells in Relation to Problems in Radiobiology. Berkeley, Calif. Prof. D. Mazia, Univ. of Calif., Berkeley 4, Calif.

AIBS PROGRAM OF VISITING BIOLOGISTS

Almost three years ago the American Institute of Biological Sciences established a program of visiting biologists to liberal arts colleges and smaller universities. The purpose of the program was to make it possible for outstanding biologists to visit campuses of essentially liberal arts institutions to confer with and speak to students. It was hoped that student interest in and appreciation of the biological sciences would be stimulated

generally and that perhaps a larger share of the better undergraduate students would select biology as a career. The success of this program by now is clear. Response from both visiting biologists and host institutions to the program has been almost universally enthusiastic.

The program was initially supported by the National Science Foundation and has been augmented during the last two years by the Atomic Energy Commission.

For the 1959-1960 academic year, the AIBS has compiled a list of seventy biologists interested in and willing to participate in the program. All disciplines of biology are represented.

Fundamentally, the program operates as follows:

1. A group of outstanding biologists is selected annually by the AIBS Committee on Education and Professional Recruitment. Speakers are chosen because of their interest and willingness to participate in the program, and also, because of their demonstrated ability to transmit ideas.

2. Publicity is given the program in the appropriate scientific communication media and by an AIBS brochure of visiting biologists.

3. Requests from schools are received at the AIBS Education Office where all scheduling and travel arrangements are handled. Schools are requested to select alternate speakers and alternate dates for visits since some duplication does occur.

4. Speakers will normally spend three days on each campus visited although it is recognized that this period of time may vary from time to time. Speakers will be available for seminars, lectures, conferences with faculty members and students, informal get-togethers, etc. If time permits, he will be available also to local civic and/or professional groups, neighboring high schools, and other nearby colleges.

The success of the program aimed at the college level has resulted in an expansion of the program to include high schools.

The high school program will commence on September 1, 1959 with approximately forty participating speakers. These speakers are not only recognized and outstanding biologists but are individuals who have demonstrated their ability to communicate with students of the high school age bracket.

This program will operate essentially the same as the college program. However, there are two essential differences.

Since the administrative organization of a high school is different from that of a college, requests for a speaker will be honored only if made by the principal of a school. In addition, an itinerary of the speaker's visit must accompany the request along with a statement of arrangements which have been made for his visit. In this way we can

assure that the visiting speaker will have local administrative support for his visit.

Additional information on both programs as well as the participating speakers and their subject topics may be obtained by writing to:

Speakers Bureau

American Institute of Biological Sciences

2000 "P" Street, N.W.

Washington 6, D. C.

SUMMER COURSES, 1960

An annual feature of the April issue of *Bacteriological News* is the listing of summer course offerings in microbiology in educational institutions. Departments wishing to list 1960 summer courses in the April, 1960 *Bacteriological News* should write the Executive Secretary (R. W. Sarber, 19875 Mack Ave., Detroit 36, Mich.) before January 1, 1960. A form will be sent to show the information wanted and form for reporting it.

BACTERIOLOGY TEACHING AIDS

The efforts of the Committee on Education to interest high school biology teachers to introduce bacteriology to their students is bearing fruit and the committee has recognized a growing demand from high school teachers for assistance in preparing for laboratory experiments and demonstrations.

The following teaching aids, prepared by the Committee on Education of the Society of American Bacteriologists, are available to teachers of biology on request to the Chairman of the Committee, Professor L. S. McClung, Department of Bacteriology, Indiana University, Bloomington, Indiana. Please indicate items desired.

1. Reference Articles on Use of Bacteriology in Elementary Biology.
2. Papers of Microbiological Interest in Scientific American, 1951-58.
3. Introductory Bacteriology Films.
4. List of Supply Houses from Which Bacteriology Supplies May Be Obtained.
5. Suggestions for Experiments in Bacteriology in Introductory Biology Classes and Student Projects.
6. Selected List of Reference Books in Bacteriology.
7. The Brochure of the Society of American Bacteriologists "A Career in Bacteriology".

A CAREER IN BACTERIOLOGY

The Society's brochure describing bacteriology as a career was reprinted earlier this year and has proven increasingly popular beyond all expectations. The terrific demand indicates an awakening and receptive interest in bacteriology and reflects in part the career promotion activities of the Local

Branches. A number of orders have been received for several hundred each which is a good indication of the widespread distribution the brochure is enjoying.

The booklet describes the several broad areas of bacteriology, suggests educational requirements for work in bacteriology, and indicates some of the opportunities for employment. Copies are available on request to the S.A.B., Office of the Executive Secretary, 19875 Mack Ave., Detroit 36, Michigan. Up to 25 copies can be obtained free of cost. Larger quantities are available at 10 cents per copy.

MEMBERS LOST OR STRAYED

The Society's office is continually faced with the task of locating certain of our members who have not notified us of change of address. The Post Office does not permit the forwarding of journals, so members do not receive them. Others make application to the Society, pay their first dues and then promptly disappear. Still others lose valuable employment opportunities. We have a number of "strayed" members and we want to know where they are. Will you please notify the Executive Secretary if you know the whereabouts of any of the following members. Addresses are last known but believed to be incorrect:

Daisy A. Kuhn, Dept. of Bacteriology, Univ. of Calif., Davis, Calif.

Joseph M. Machinist, 6-54 146th St., Flushing, L. I., New York

Richard H. Matherson, UCLA Medical Center, Department of Anatomy, Los Angeles 24, Calif.

Elisabeth Mees Schneider, Dept. of Biology, St. Olaf College, Northfield, Minnesota

Beverly J. Pewtress, 2582 Harrison Blvd., Ogden, Utah.

Troy S. Price, PO Box 178, 34 Main Street, Durham, New Hampshire.

Clifton J. Woods, 818 E. 49th, Chicago 53, Illinois.

Paul E. Yoder, 448 N. Myrtle, Monrovia, California.

NECROLOGY

O. B. Williams, Professor of Bacteriology and Chairman of the Department at the University of Texas, died September 23, 1959, after a brief illness. A graduate of the Universities of Texas and California, Dr. Williams spent his entire post-doctoral career on the faculty of the University of Texas except for the period from 1935 to 1941, when he served as a bacteriologist with the National Canners Association in Washington, D. C. Dr. Williams was 64 years of age when he died. He was a faithful member of the Society since 1922.

NOTICES

Standard Descriptive Charts, which appear in the Manual of Microbiological Methods, can be purchased from the office of the Executive Secretary, SAB, 19875 Mack Avenue, Detroit 36, Michigan.

Journals wanted: Dr. Richard Dam, Department of Biochemistry and Nutrition, College of Agriculture, University of Nebraska, Lincoln, needs *Journal of Bacteriology* Vol. 64, No. 4 and Volumes 67 through 72.

(Continued on page 17)

SPECIAL REPORT ON LANTERN SLIDES

There is no better time to reflect on the quality of lantern slides than at the end of one of our annual meetings. Several days devoted to efforts to decipher the messages hopefully conveyed by a succession of tables and graphs, many of which are intelligible only to the authors, certainly underlines the need to improve the quality and clarity of some of our visual presentations.

Doubtless in this frame of mind the members present at the 1958 business meeting in Chicago approved a motion calling for the appointment of a committee to prepare recommendations for the preparation of lantern slides. With characteristic dispatch, President Harry Eagle named Dr. Harry Morton (chairman), Dr. Merrill W. Chase and Dr. John M. Slack to do the job.

The committee's first report was distributed in November, 1958 with the abstract blanks for the 1959 meeting. Subsequently there appeared a second report containing "Recommendations for the Projection of Lantern Slides."

Dr. Morton's committee went to a great deal of effort to assemble the recommendations and its efforts should not be overlooked. Consequently, both reports are printed in this issue for the information of everyone. They are located at the center of the *News* so you can easily remove your copy and save it if you discard the balance of the issue.

Bacteriologists will find the recommendations useful in preparation for seminars, classes, research conferences, and other presentations as well as for our Annual Meetings.

Reprints of both reports are available on request to:

Society of American Bacteriologists
Raymond W. Sarber, *Executive Secretary*
19875 Mack Avenue
Detroit 36, Michigan

Send a self-addressed, stamped, long envelope with your request.

RECOMMENDATIONS FOR THE PREPARATION OF LANTERN SLIDES*

The following material is presented as a guide for those who desire to use lantern slides for illustrating an oral presentation of technical material. Poor lantern slides detract from an oral presentation, and the most common fault of lantern slides is that the lettering is illegible to a large portion of the audience.

General Considerations

Certain minimum requirements must be met in the preparation of copy for lantern slides in order to satisfy the limitations of human vision even when adequate projection facilities are available to the speaker. For example, if a letter or number is to be legible on the screen it must subtend an angle of at least 9 minutes at the viewer's eye or, expressed in another way, the height of the letters on the screen should be equal to about $\frac{1}{250}$ th of the farthest spectator's viewing distance. The following recommendations are for the purpose of meeting at least these minimum requirements. Emphasis will be placed on the preparation of printed material and tables, as these materials are most frequently reproduced improperly in lantern slides.

The standard lantern slides in the U.S.A. measure $3\frac{1}{4}$ inches high by 4 inches wide or 2 by 2 inches. To allow for binding the edges of the slides and holding the slides in the projector, the usual area which is actually used for copy is $2\frac{1}{4}$ by 3 inches on the $3\frac{1}{4}$ -by 4-inch lantern slides and approximately 1 by $1\frac{1}{2}$ inches on the 2 by 2 slides. These actual usable areas on the lantern slides determine the ratio of height to width of the copy for the slides.

The quality of a lantern slide is determined at the very beginning by the author in the selection and organization of material for copying onto the slide. Certain general principles are helpful in planning the selection and organization of material for a good lantern slide, to wit:

1. Only one central idea should be presented in a slide. It is better to prepare more than one lantern slide, each with one idea forcefully presented, rather than one slide with several ideas which may confuse the audience in the short time that they have to concentrate on the image which is projected onto the screen. Decide what idea you want to convey to the audience.

2. The material in the copy for the slide should be as brief as possible. It is not necessary for a lantern slide to be self-explanatory as it will be supplemented by the speaker's explanation of the idea being presented.

3. The subject matter in a lantern slide, or in a series of slides, should be arranged to coincide

*Reprints of these reports are available on receipt of a self-addressed, stamped, long envelope sent to Society of American Bacteriologists, 19875 Mack Ave., Detroit 36, Michigan.

with the order in which it will be treated in the oral presentation.

4. The subject matter must be prepared in suitable copy so that, when projected onto the screen, it can be read easily by everybody in the audience. Projectors only magnify what is on the lantern slide; they magnify faults as well as good features in the copy.

After selecting the material for a lantern slide according to the principles enumerated as 1, 2, and 3 above, it is necessary to see that the material is prepared in suitable copy for the lantern slide. Only with suitable copy can a satisfactory slide be prepared by a photographer.

Typewritten Copy

Typewritten copy can be employed for lantern slides but several precautions should be followed for the best results. Pica type is more desirable than Elite type and Pica Gothic type is preferable. Only upper case letters should be used. The keys should be cleaned; a new black typewriter ribbon (preferably a carbon paper ribbon of medium hardness) should be used; and carbon paper of medium hardness should be placed in reverse in back of the copy page so that printing appears on both sides of the copy page. A white paper should be used; it should be of a high quality, with a smooth, hard surface, free of grain and ripple.

For best results the lettering on a slide should not be smaller than $\frac{1}{25}$ th of the maximal usable height of a lantern slide. Visibility lessens rapidly and legibility is lost at about $\frac{1}{33}$ rd of the height. It is evident that the headings and entries, as well as the spaces between the typed lines, must be contained within a height of 25 vertical typewriter spaces. Since 25 vertical typewriter spaces measure $4\frac{1}{4}$ inches, this establishes the height of the copy. Applying the ratio of the dimensions of the usable area on the slide of $2\frac{1}{4}$:3, it is apparent that *typewritten copy, before photographic reduction, must be confined within an area no greater than $4\frac{1}{4}$ inches high by $5\frac{3}{4}$ inches wide.* Copy of this size will be satisfactory also for making 2 x 2 slides. The photographer should be instructed to utilize the maximum area within the lantern slide mask.

Hand Lettering

Much better slides can be prepared if a mechanical lettering set, such as LeRoy, Wrico, or their equivalents, is employed for preparing the copy rather than a typewriter. Hand lettering offers

greater flexibility in choice of letter sizes, thickness of lines, and spacing. Several precautions must be observed.

a. For hand lettering, it is necessary to prepare the copy much larger than the usable area in the lantern slide and reduce the size of the copy photographically when the lantern slide is prepared. A convenient size for copy, which is normally wider than it is high, is $6\frac{3}{4}$ inches high and 9 inches wide; these dimensions are 3 times those of the usable area of the lantern slide. If copy does not conform to this general shape, it should be rearranged so as to utilize the maximum amount of the height. If necessary, the horizontal dimensions may be shortened. A simple method for determining the working area for lantern-slide copy is to scale off in the lower corner of a sheet of paper the actual dimensions of the usable area of the projection slide to be used. Draw a diagonal line across the area from corner to corner and extending beyond the original area to the upper edge of the paper. By drawing a horizontal and a vertical line from the same point anywhere on the diagonal line, one has within the enclosed area the same proportions that are available in the lantern slide. All lettering or curves should be confined within this area.

b. The height of the letters in the copy may be estimated from the following formula:

$$H = \frac{C \times A}{400 P}$$

where

H = height in inches of minimum size letters

C = maximum width in inches of copy employed

A = maximum distance in feet of audience from screen

P = width in feet of projection on the screen when the width of the usable portion of the lantern slide is 3 inches.

If the dimensions of the copy area are properly selected, as for example the $6\frac{3}{4}$ by 9 inch area which will be reduced photographically to an area $2\frac{1}{4}$ by 3 inches on the slide, an alternate method for calculating the size of the letters is as follows: The minimum height of the letters should not be less than $\frac{1}{35}$ th of the height of the copy space. The minimum width of the letter space should be not less than $\frac{1}{45}$ th the width of the copy space. The thickness of the letter lines should be about $\frac{1}{250}$ th of the height of the copy, or roughly 0.15 of the letter height.

c. Spacing between lines should be equal to the letter height. The spacing between letters should be about $\frac{1}{3}$ rd of the letter width or not less than twice the letter-line thickness.

d. For curves, the grid lines should be the lightest and should be about $\frac{1}{2}$ of the width of

the letter-line thickness. The border lines, or reference lines, should be of medium width and about 1.5 times the letter-line thickness. The heaviest lines should be used for the graph curve and should be about twice the letter-line thickness.

e. The paper should be white, hard-surfaced, and of good quality (32 lb. white ledger paper, 100% rag content, is preferable). Black India drawing ink should be used.

... And Finally

To test the legibility of copy for a lantern slide, measure the width of the copy in inches, divide the number by 2, and hold the copy that many feet from the eye. If the copy can be read easily, it can be predicted that the material on the screen will be legible when the slide is projected.

After making the lantern-slide copy into a lantern slide, the photographer customarily places a thumb dot in the lower left-hand corner as he holds the slide so as to properly read the copy material in the slide. The slides should be stored with the thumb dot in the upper right-hand corner, so that the slides will be upside down and ready to be placed in the projector. If more than one slide is to be used, the slides should be numbered consecutively, preferably on or near the thumb dot, and placed in proper sequence for the projectionist. Before turning the slides over to the projectionist, the author should make sure that the surfaces of the slides are clean, and, especially, free from thumb and finger prints and from dust. Handle slides by grasping the edges, not the surfaces.

Upon turning the slides over to the projectionist, the author should make sure that the slides are in proper order and the owner of the slides is clearly indicated. The projectionist should be informed when, during the delivery of the paper, the slides are to be projected and if there are any special features such as the reuse of certain slides or intermixing $3\frac{1}{4}$ x 4 and 2 x 2 inch lantern slides. Finally, the speaker should familiarize himself with the amplification facilities and microphone position so that he will not have to leave the proper position for communicating with his audience during the projection of the slides.

The quality of lantern slides depends upon the thought and care devoted to their preparation. Following the above suggestions will guarantee satisfactory lantern slides.

—Committee for the Improvement of Lantern Slides to be Used at the Annual Meetings, Society of American Bacteriologists.

John M. Slack

Merrill W. Chase

Harry E. Morton, Chairman

RECOMMENDATIONS FOR THE PROJECTION OF LANTERN SLIDES

The first report of the Committee for the Improvement of Lantern Slides to be used at the Annual Meetings, Society of American Bacteriologists, was entitled *Recommendations for the Preparation of Lantern Slides* and was addressed to those concerned with the selection and organization of material for lantern slides and the use of lantern slides in their oral presentations. This report is concerned with *Recommendations for Facilities for the Projection of Lantern Slides* and is addressed to those concerned with the selection of facilities and the projection of lantern slides.

Room

The meeting room should be rectangular, free from pillars, and capable of being darkened by the projectionist, although all light need not be excluded. It is important that the areas immediately adjacent to the screen should be maintained dark; stray light falling on the surface of the screen excessively dulls colors and black and white images. The speaker's podium and screen should be at one end of the room. The seating capacity of the room may be estimated by allowing six square feet of floor space per person.

Seating Arrangements

It is recommended that the first row of seats should not be nearer to the screen than a distance equal to twice the width of the screen. The last row of seats should not be farther away from the screen than a distance equal to six times the width of the screen. Since the best positions for viewing all types of screens are directly in front of the screen, a center aisle is to be avoided. Use adequate aisles near the sides of the room.

Screen

The screen should be located at one end of the room, at equal distances from the walls, and behind the speaker's podium. The bottom of the screen should be well above the tops of the heads of the audience seated in the front row of seats but never at a height which requires members of the audience to strain their necks.

The screen should be square and have a width equal to $\frac{1}{6}$ th of the distance of the last row of seats from the screen.

The lenticular screen is best for both front and wide angle viewing. The beaded screen is satisfactory for rooms which are long and narrow in which the viewing angle is less than 26° on each side of a line drawn at right angles from the

center of the surface of the screen. The smooth surface or matte type screen is better than a beaded screen in wide rooms.

Projectors

The distance between the projector and the screen should be about 7 times the width of the screen. The projectionist should be able to control the room lights from the position of the projector.

Suitable projectors with bulbs of at least 500 watts should be used with 2 x 2 in. and $3\frac{1}{4}$ x 4 in. lantern slides. It is best to keep an extra bulb near each projector at all times. To guard against a bulb burning out while in use, it is wise to avoid projection with an old, badly discolored projection bulb.

The reflector, condenser lenses, and projection lenses should be inspected for cleanliness in advance. The maximum transmission of light is possible only when the lenses are free from dirt and finger prints.

The image should occupy nearly the entire width of the screen. This should be tried with a test slide until the proper projection conditions are established. To meet these conditions, lens of the proper focal length should be used in the projector. Knowing the width of the screen and the distance from the projector to the screen, lens of the proper focal length should be selected. Lens of 12 in. and 16 in. focal length are the ones most commonly used in projectors for $3\frac{1}{4}$ x 4 in. lantern slides and lens of 5 in. and 7 in. focal length are the ones most commonly used in projectors for 2 x 2 in. lantern slides. It may be necessary to use lenses of focal lengths other than the ones commonly used because of the variation in sizes of meeting rooms at conventions. Tables for aiding in selecting the proper lens are reproduced below.

Projector lens focal lengths for $3\frac{1}{4}$ x 4
inch lantern slides

Lens Focal Length	Projector-to-Screen Distance											
	10'	15'	20'	25'	30'	35'	40'	45'	50'	60'	70'	80'
	Square screen size											
6"	60"	8'	10'	14'	16'	18'	20'					
9"	40"	60"	7'	9'	10'	12'	14'	16'	18'	20'		
12"	40"	50"	70"	7'	8'	9'	10'	12'	14'	16'	18'	20'
16"		40"	50"	60"	70"	7'	8'	9'	10'	12'	14'	16'
20"			40"	50"	60"	70"	7'	8'	9'	12'	14'	16'
24"				40"	50"	60"	70"	7'	8'	9'	10'	12'

Projector lens focal lengths for 2 x 2
inch lantern slides

Lens Focal Length	Projector-to-Screen Distance													
	10'	15'	20'	25'	30'	35'	40'	45'	50'	60'	70'	80'	90'	100'
	Square screen size													
3"	40"	60"	7'	8'	9'	12'	12'	14'	16'	18'				
4"	40"	50"	60"	70"	7'	8'	9'	12'	12'	14'	16'	18'		
5"		40"	50"	60"	70"	7'	8'	9'	12'	14'	16'	18'	18'	
6"			40"	40"	50"	60"	70"	7'	7'	8'	9'	12'	14'	16'
7"				40"	40"	50"	60"	70"	70"	7'	8'	9'	12'	14'
8"					40"	40"	50"	50"	60"	70"	70"	7'	8'	9'
9"						40"	40"	50"	50"	60"	60"	7'	7'	8'
													9'	10'

After the screen and projector have been placed in position, the projection facilities should be checked by projecting a test slide. A test slide of the 3¼ x 4 in. size should have a mask opening of 2½ x 3 inches. A test slide of the 2 x 2 in. size should have a maximum mask opening of 1 in. x 1½ in. (26 x 38 mm) and should be tried with the long dimension of the mask opening in the vertical as well as in the horizontal position. Make certain that the image fills the screen and is evenly illuminated, that all parts of the screen image are in focus at the same time, and the image can be seen and read from all seats in the meeting room.

—Committee for the Improvement of Lantern Slides to be Used at the Annual Meetings, Society of American Bacteriologists.

John M. Slack
Merrill W. Chase
Harry E. Morton, Chairman

(Continued from page 12)

Postdoctoral Study in Statistics. Awards for study in statistics by persons whose primary field is not statistics but one of the physical, biological, or social sciences to which statistics can be applied are offered by the Department of Statistics of the University of Chicago. The awards range from \$3,600 to \$5,000 on a nine months' basis or \$4,400 to \$6,000 on an eleven months' basis. The closing date for application for the academic year 1960-61 is February 15, 1960. Further information may be obtained from the Department of Statistics, Eckhart Hall, University of Chicago, Chicago 37, Illinois.

British Members. The Treasurer of the Society received a letter from the Chief Inspector of Taxes Branch, Inland Revenue, stating in part: "I have to inform you that the Commissioners of Inland Revenue have approved The Society of American Bacteriologists for the purposes of Section 16, Finance Act, 1958, and that the whole of the annual subscription paid by a member who qualifies for relief under that Section will be allowable as a deduction from his emoluments assessable to income tax under Schedule E."

"A British member of the society who is entitled to the relief should apply to his tax office as soon as possible for form P358 on which to make a claim for the relief due to him."

NEWS ABOUT OUR MEMBERS

Edward Kravitz, formerly Associate in Clinical Pathology at Woman's Medical College of Pennsylvania, is now Director and owner of the Newark Medical Laboratory, Newark, Del. Facilities and consultants are available for clinical, analytical and research work in the industrial and public health fields.

At Indiana University promotions in the Department of Bacteriology included changes in rank from Assistant to Associate Professor, **Walter A. Konetzka** and **Roy Repaske**.

David L. Fagle, biology teacher at Marshalltown, Iowa High School and Marshalltown Junior College has been named to the S.A.B. Committee on Education.

Albert Siegal has recently joined the Department of Agricultural Chemistry, University of Arizona, Tucson. He was formerly at the University of California, Los Angeles.

Everett Bracken, formerly in the Department of Microbiology, Vanderbilt University Medical School, has accepted an appointment in the Department of Pediatrics, University of Oklahoma Medical Center.

William Murray Bain has been appointed Assistant Professor in the Department of Bacteriology at the University of Maine at Orono.

New Elections to National Academy of Science include **David M. Bonner**, Yale University

and **William B. Wood, Jr.**, Johns Hopkins University.

Morris Schaeffer has left the CDC at Montgomery, Ala., to join the New York City Department of Health, Bureau of Laboratories.

J. L. Stokes has resigned as head of the Microbiology Unit at the Western Regional Research Laboratory (USDA) Albany, Calif., to become Professor and Chairman of the Department of Bacteriology and Public Health, Washington State University, Pullman, Washington.

Clinton C. McDonald has retired from the University of Wichita but plans to continue working in microbiology.

Included in a delegation of 5 American scientists for an exchange visit to U.S.S.R. were **Arthur Kornberg**, Washington University School of Medicine, St. Louis and **Bernard D. Davis**, Harvard Medical School.

Charles L. Wittenberger has been appointed Postdoctorate Fellow in the Public Health Service for work at the National Institutes of Health.

Back to the University of Texas from Chulalongkorn University, Bangkok, Thailand, is **Charles E. Lankford**.

H. Albert Barker, Professor of Microbial Biochemistry, University of California, Berkeley, received the Neuberg medal of the American Society of European Chemists.

Clarke Gray of Harvard is spending a year at the Cell Metabolism Research Unit, University of Oxford, England.

Theodore Burnstein, formerly with Sharpe and Dohme, has joined the Department of Microbiology, School of Medicine, University of Miami, Florida.

Donald D. Sutton is spending a year at the Institute of Microbiology, Rutgers University as the Waksman-Merck Postdoctorate Fellow in Microbiology.

Edward A. Steinhaus, Laboratory of Insect Pathology, University of California, Berkeley, has been named Managing Editor of the new *Journal of Insect Pathology* (Academic Press). The Journal provides a publishing medium for all phases of insect pathology, a rapidly developing field which utilizes the techniques and knowledge of the various disciplines of microbiology.

M. L. Gray of the Veterinary Research Laboratory, Montana State College, Bozeman is establishing a laboratory for the serotyping of cultures of *Listeria monocytogenes* isolated from both human and animal sources. This laboratory will operate in cooperation with the Communicable Disease Center and cultures may be submitted through either the CDC or sent directly to the address above. A report of the results will be sent to the submitting laboratory and will also be filed with the CDC. It will be appreciated if laboratories which isolate this bacterium, or cultures suspected of being *L. monocytogenes*, will submit them for

serotyping. If a sufficiently large number of cultures is available for serotyping, the results may be an important aid in unraveling the obscure epidemiology of listeric infections.

The bacteriology laboratory of the Leonard Woods Memorial is now located at the Johns Hopkins School of Hygiene, 615 North Wolfe St., Baltimore, Maryland, where **John H. Hanks** is associate professor of pathobiology. **Byron S. Tepper** has also moved to this address.

H. Katznelson, formerly Chief of the Bacteriology Division, Science Service, Canada Department of Agriculture, has been appointed Director of the Microbiology Research Institute of the Research Branch of this Department. The Institute was established in a recent reorganization of the research program of the Canadian Department and will concern itself primarily with basic studies on microorganisms of agricultural significance.

LOCAL BRANCH ACTIVITIES

REPORTS FROM LOCAL BRANCH MEETINGS

Virginia Branch (Catherine M. Russell,
Secretary-Treasurer)

May 8, 1959. University of Virginia, Charlottesville, Virginia.

The Spring meeting was held in conjunction with the Virginia Academy of Science.

1. The enzymatic formation of arabinose-5-phosphate. Wesley A. Volk, Department of Microbiology, University of Virginia School of Medicine, Charlottesville, Virginia.

2. A comparative study of media for the detection of enterococci in water. R. Travis Hill, State Department of Health Laboratory, Richmond, Virginia.

3. *Listeria meningitis*—is it rare? H. J. Welshimer, Department of Microbiology, Medical College of Virginia, Richmond, Virginia.

4. Serum lysozyme levels in rabbits undergoing a generalized granulomatous reaction. Quentin Myrvik and Eva Soto Leake, Department of Microbiology, University of Virginia School of Medicine, Charlottesville, Virginia.

5. Reduction of potassium tellurite by *Streptococcus bovis*. Margaret Carlson and P. Arne Hansen, Department of Microbiology, University of Maryland, College Park, Maryland.

6. Observations on the effect of carbon dioxide on the growth of *Entamoeba histolytica*. E. Clifford Nelson and Muriel M. Jones, Department of Microbiology, Medical College of Virginia, Richmond, Virginia.

Washington, D. C. Branch (Charlotte C. Campbell,
Secretary-Treasurer)

May 26, 1959. Walter Reed Army Institute of Research, Washington, D. C.

1. Studies on the mode of action of streptomycin. Jennie Ciak, Department of Molecular Biology, Walter Reed Army Institute of Research, Washington.

2. The infectious nature of pancreatic necrosis in fish. S. F. Snieszko and Kenneth Wolfe, Eastern Fish Disease Laboratory, Fish and Wildlife

Service, Department of the Interior, Kearneysville, W. Va.

3. Studies of *Borrelia vincentii*. T. A. Nevin and E. G. Hampp, National Institute of Dental Research, National Institutes of Health, Bethesda, Md.

Ohio Branch (Elizabeth Wilson,
Secretary-Treasurer)

April 4, 1959. University of Cincinnati, Cincinnati, Ohio

1. Yeasts in polluted water and sewage. Wm. Bridge Cooke, R. A. Taft Sanitary Engineering Center, Cincinnati, and H. J. Phaff, M. W. Miller, M. Shifrine, and Elisa P. Knapp, University of California, Davis.

2. The effects of metallic ions on sewage microorganisms. George W. Malaney, Ohio State University, Columbus.

3. Application of membrane filter technique to determination of sanitary quality of farm pond waters. Robert M. Gerhold, G. W. Malaney, H. H. Weiser, and G. O. Schwab, Ohio State University, Columbus.

4. Extended host ranges for certain actinophages. Koby Crabtree and E. B. Shirling, Ohio Wesleyan University, Delaware.

5. Serologic studies on human low density lipoproteins. Wm. W. Briner, J. W. Riddle, and D. G. Cornwell, Ohio State University, Columbus.

6. Basal media and fermentation tests. J. V. Lawrence, Ohio University, Athens.

7. Laboratory diagnosis of the candidas. Emily H. Rice, The Jewish Hospital, Cincinnati.

8. Preliminary experience with the poliomyelitis complement fixation test. Charles C. Croft, D. A. Keiper, and G. R. Anderson, Division of Laboratories, Ohio Department of Health, Columbus.

9. A study of antigen transport across the placental barrier. Curtis Sandage and Orton Stark Miami University, Oxford.

10. Primary phase of the U. S. Government cancer screening program. R. Eugene Bookman, The Wm. S. Merrell Company, Inc., Cincinnati

BOOKS AND REVIEWS

Bigger's Handbook of Bacteriology, 7th Edition, F. S. Stewart, Dublin: The Williams & Wilkins Co., 1959, 611 pp., \$8.00.

Basic Bacteriology and Its Biological and Biochemical Background, 2nd Edition, C. Lammanna, Berkeley and M. F. Mallette, State University, Pa.: The Williams & Wilkins Co., 1959, 853 pp., \$13.50.

Determinative Bacteriology: Laboratory Manual, 2nd Edition, Thomas H. Lord, Manhattan, Kan.: Burgess Publishing Co., 1959, 84 pp. (plus descriptive charts), \$3.25.

Laboratory Manual for General Bacteriology, 5th Edition, G. L. Peltier, C. E. Georgi, L. F. Lindgren, Lincoln, Neb.: John Wiley and Sons, Inc., 295 pp., 1959, \$4.50.

Laboratory Manual for Food Microbiology, 3rd Edition, W. C. Frazier and E. M. Foster, Madison, Wis.: Burgess Publishing Co., 1959, pp. 131, \$3.60.

The Interference Microscope in Biological Research, A. J. Hale, Baltimore: The Williams & Wilkins Co., 1959, 114 pp., \$5.00.

Methods of Biochemical Analysis, Volume 7, David Glick, Editor, New York: Interscience Publishers, Inc., 1959, 353 pp., \$3.50.

This volume contains eight papers of considerable interest to biochemists, describing new techniques and reviewing older analytical procedures. The titles include Immunoelectrophoretic Analysis, by Pierre Grabar (Pasteur Institute, Paris); The Analysis of Basic Nitrogenous Compounds of Toxicological Interest, by A. S. Curry (Home Office, Forensic Science Laboratory, Harrogate); Spectrophotometry of Translucent Biological Material—Opal Glass Transmission Method, by Kazuo Shibata (Tokyo Institute of Technology); The Determination of Inositol, Ethanolamine and Serine in Lipides, by John M. McKibbin (State University of New York Medical Center at Syracuse); The Assay of Lipoprotein Lipase in Vivo and in Vitro, by Edward D. Korn (Laboratory of Cellular Physiology and Metabolism, National Heart Institute, Bethesda); Determination of Creatinine and Related Guanidinium Compounds, by John F. Van Pilsum (University of Minnesota, Minneapolis); The Determination of Ethyl Alcohol in Blood and Tissues, by Frank Lundquist (University Institute of Forensic Medicine, Copenhagen); and Determination of Heparin, by Louis B. Jaques and Helen J. Bell (University of Saskatchewan, Saskatoon).

The paper of greatest interest to bacteriologists is probably the one on Immunoelectrophoretic Analysis. This deals primarily with the preparation and use of agar gels for the electrophoretic

separation of proteins, and with immunological reactions carried out on a micro-scale. The use of specific precipitation reactions provides a convenient means for identifying the immunological components of a mixture. The paper on spectrophotometry of translucent materials is also of interest to bacteriologists, permitting absorbance measurements to be made by difference between two translucent samples.

The important field of lipid metabolism is touched upon by three of the papers. Dr. Korn not only covers analytical procedures, but has an excellent review of the effects of heparin on lipemia. The paper on the determination of heparin is handled in a masterly fashion by Dr. Jaques, one of the foremost authorities in the field. The analytical procedures for inositol are covered by chemical and microbiological assay techniques, with colorimetric procedures for ethanolamine and serine. The analytical methods for guanidinium compounds include specific procedures for arginine, guanidinoacetic acid, guanidine, methyl guanidine and canavanine, as well as for creatinine and creatine. Two papers on forensic chemistry complete the series. The colorimetric and enzymatic methods for ethanol are designed primarily for blood and tissues, but can be adapted to fermentation studies. The paper on toxicology is a comprehensive review of the applications of paper chromatography to the separation and identification of numerous alkaloids, providing a most useful analytical tool in this field.

A. J. GLAZKO

Photomicrography, Second Edition, Roy M. Allen, Princeton, N. J.: D. van Nostrand Company, Inc., 1958, 441 pp., \$9.00.

The first edition of this excellent book appeared in October 1941 followed by two reprintings and a second edition in November 1958. The edition continues to be a bookshelf necessity for the investigator who seeks perfection in his photomicrographic efforts.

One of the fine features of the text material is its clarity of definitions. In the same vein of thought the directives in procedure are precisely stated and explained. The chapter headings are well chosen and progress from one on Fundamental Principles of Photomicrography to successive ones concerning equipment, techniques and processes. The chapters covering the basic subject of phase and interference microscopy and the electron microscope are of particular interest. To the more astute microphotographer the discourse concerning metallography, stereoscopic techniques and other specialized methods should have particular

appeal. The 10th and last chapter of the book is a selection of 54 photomicrographs with exposure data; each picture is given full description.

Too often the bench worker rushes into photomicrography with valuable, often perishable, material to photograph, but with limited knowledge of the principles needed to obtain the best results in lighting, exposure time and development. Success in his attainment is fortified by the assumption that taking various exposures will result in getting the best picture. Perusal of this volume between such test periods of one's ability should contribute most profitably toward a greater degree of success.

O. N. ALLEN

Principles of Microbiology, 2nd Edition, W. W. Krueger and K. R. Johansson, Philadelphia: W. B. Saunders Co., 1959, 563 pp., \$6.75.

The first edition of this textbook, designed primarily for use in an introductory course, was written by Dr. Krueger, in 1953. Dr. K. R. Johansson has joined with Dr. Krueger in the preparation of an up-to-date second edition. The subject matter is presented in as basic and simplified a manner as possible so that it can be understood by students having knowledge of the elements of chemistry and biology. Terminology is kept to a minimum; pronunciation of the names of orders and families of the bacteria is clearly shown. There are "study questions" at the end of each chapter, along with references to useful books, monographs and review articles.

Over one-third of the book is devoted to basic bacteriology; the next one hundred pages cover "useful activities" of microorganisms, the microbiology of sewage and water, and the microbiology of foods. The final 143 pages are devoted to infectious diseases of man, animals and plants.

The type and printing are excellent, and the book contains numerous well-chosen illustrations. However, the nitrogen cycle on page 295 shows nitrates being formed by nitrogen-fixing bacteria; unfortunately, this does not occur. Chapter 19, on industrial utilization of microorganisms, fails to discuss the production of antibiotics, but this subject is covered on pages 269-276 in a chapter on chemotherapeutic agents.

This book, like others which attempt to survey the whole science of microbiology, may be criticized for errors of omission, and for failure to treat each subject considered in adequate detail. However, the authors have done a good job, and the book fulfills the purpose for which it was designed.

W. B. SARLES

Advances in Enzymology, Volume 21, F. F. Nord, Editor, New York: Interscience Publishers, Inc., 1959, 521 pp., \$12.50.

This volume will be of particular value to those

scientists concerned with mitochondria and to those with an interest in purine and pyrimidine biosynthesis. "Mitochondrial Metabolism" by W. C. Schneider, is a well-proportioned and objective coverage of isolation, chemical composition, synthetic, and enzymatic activities. "Electron Transport and Oxidative Phosphorylation", by D. E. Green, is mainly restricted to an exposition of the experimental work and interpretations thereof by the Wisconsin group, with a heavy emphasis on the nature and functioning of the submitochondrial "electron transport particles".

Three reviews of related interest begin with "Enzymatic Reactions in the Synthesis of Purines", by J. M. Buchanan and S. C. Hartman, a lucid presentation from the laboratory responsible for much of the original work in this field. A considerable proportion of this review is devoted to a discussion of the possible mechanisms involved in the various biosynthetic steps. "The Enzymatic Synthesis of Pyrimidines", by P. Reichard is a more brief but excellent summary of current knowledge of formation of orotic acid and its conversion to the pyrimidine nucleosides and nucleotides. "Folic Acid Coenzymes and One-Carbon Metabolism", by F. M. Huenekens and M. J. Osborn, is a valuable companion to the two preceding reviews, since the title subjects are intimately involved in aspects of both purine and pyrimidine biosynthesis.

Two reviews are concerned with metal ion effects. "Mechanism of Metal Ion Activation of Enzymes", by B. G. Malmström and A. Rosenberg is, as the authors indicate, "strictly limited to the purpose stated", dealing only (but very readably) with mechanism studies. "Durch Metall-Ionen Katalysierte Vorgänge, Vornehmlich im Bereich der Seltenen Erdmetalle", by E. Bamann and H. Trapmann, is to a considerable extent an annotated bibliography of the authors' and other European publications on the subject of non-enzymatic catalysis of various organic reactions by rare earth metal ions. This comment is not meant to belittle the value of bringing these surprisingly extensive investigations to the attention of those who do not follow the German literature too closely.

Last to be mentioned, but certainly not least in interest, "The Biosynthesis and Function of the Carotenoid Pigments", by T. W. Goodwin, is a well-knit and extensively documented discussion; it should be noted that animal carotenoids are not covered.

R. E. MAXWELL

Perspectives in Virology, Morris Pollard, Editor, Galveston, Texas: John Wiley and Sons, Inc., 1959, 312 pp., \$7.00.

This book is composed of 15 reviews of topics of current investigative interest in the virus field

which were presented at a symposium held in memory of Dr. F. R. Beaudette, a leading contributor to our knowledge of avian and equine viruses. Included also is a warm, intimate summary of Dr. Beaudette's scientific life by his long time colleague at Rutgers, Selman A. Waksman, and a delightful, philosophical epilogue entitled, "Tulipomania and the Benevolent Virus," by Rene J. Dubos. The chapters are accompanied by discussions in which some 45 distinguished American and European scientists participated. In the words of its editor, "This symposium is evidence of multidisciplinary ramifications of virology, and explores the implications of basic developments for future public health application."

Unfortunately much of the material covered is duplicated in current textbooks or in summaries of other symposia and conferences. Even so, *Perspectives in Virology* stands out by virtue of the high quality of the formal presentations and the depth, breadth and spontaneity of the discussions. Animal virus work is appropriately emphasized in the chapters by Schaeffer on the life cycles of fowl plague and EEE viruses, by Shope on hog cholera, by Traub on specific immunity as a factor in the ecology of viruses, by Andrewes who argues for an animal origin of Asian influenza and by Beard, Friend, Stewart and Eddy in the excellent chapter on viral neoplasia. Dr. Peyton Rous' extemporaneous remarks add greatly to the latter chapter.

This volume will be most useful to those especially interested in animal viruses.

A. F. RASMUSSEN, JR.

Progress in Biochemistry since 1949. Felix Haurowitz, New York: Interscience Publishers, 1959, 357 pp., \$8.50.

Progress in biochemistry appears to need reviewing at frequent intervals; it is reviewed annually and the volume under consideration here is the fifth in a series which has previously reviewed the progress of biochemistry, (in 1924, 1931, 1938 and 1948). The author indicates the prime motive for writing this volume was his desire to keep abreast of the state of Biochemistry. However commendable the desire to be well informed in scientific fields it is to be hoped that keeping up with the scientific literature does not, of necessity, involve the agony of writing a book.

The progress of biochemistry during the past decade has been divided into the more or less standard areas, e.g., Thermodynamics, Biological Oxidations, Amino Acid Metabolism, Carbohydrates, etc. Additionally, there are several chapters representing areas of development not usually subject to annual review (Cellular Chemistry and Immunochemistry). It would be impossible to review the subject matter in the twenty chapters and no attempt will be made to do so.

The large area encompassed by the progress report necessitated employing a number of space saving tactics such as abbreviations, the use of smaller print for what are described as "side lines of biochemical research" and the condensation of references at the end of each subchapter. Editors might frown at the non-standard abbreviations but they occasion the reader far less difficulty than the condensed format used for literature citations.

Preparation of a progress report of this magnitude is attended by several built-in difficulties. Space does not permit critical evaluation of experimental techniques or interpretations of data. Likewise discussions of long range implications must be kept to a minimum. To some extent the interests of the author pointing out the progress will be reflected in the selection of topics and while predilection is evident in this volume it is neither undue or objectionable. The prospective reader may well look upon this volume with mixed feelings—it does not replace the detailed and well documented *Annual Review of Microbiology*, yet there might be some value to the longer retrospective look. Professor Haurowitz is to be commended for his courage in undertaking to outline progress in a field where the wheat of real progress is often difficult to separate from the chaff of publication.

The reviewer is left with the impression that *Progress in Biochemistry since 1949* is akin to a sack dress—it provides adequate coverage and touches the subject in intimate detail at only a few spots but since these are the important places there is considerable justification for the volume.

R. E. KALLIO

Aids to Bacteriology for Nurses. E. Joan Bocock and Katharine F. Armstrong, London: Bailliere, Tindall and Cox, 1959, 175 pp., \$3.00. The Williams & Wilkins Co., Baltimore, exclusive U. S. agents.

This little book is one of a series in the fields of knowledge required by nurses; the aim has been to provide concise and clear information in an easily read and easily carried text.

An amazing amount of practical information is condensed in this text, with particular emphasis on the role of microorganisms in infection, routes of infection, techniques of asepsis and sterilization. There is an excellent section on the role of the bacteriological laboratory in diagnosis of infectious disease. The briefest possible descriptions of organisms and diseases are given.

The microbiology courses taught for students of nursing vary tremendously, so that for some groups this book might be adequate. For more extensive courses, additional material in the form of more extensive texts and well-informed instructors could provide helpful supportive information. The information here is mostly well-chosen, but is

condensed to the point that alone the text might be confusing rather than illuminating. For the U. S. audience the use of unfamiliar proprietary names in the section on bactericides may be difficult.

The book is well-written, contains valuable information, and can be used with profit by students and instructors in bacteriology courses for nursing students.

MARION JONES

NEW MEMBERS

New Members

June 27, 1959 through September 10, 1959

Alpern, Joyce Z., 1 East 63rd Street, Savannah, Georgia

Anderson, Jr., Alfred R., 193 So. Jordan Street, Ventura, California

Aron, Stephen A., 1502nd T U CmlC, Fort Detrick, Maryland

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Hospital Andrews, Andrews Air Force Base,
Washington 25, D. C.
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ment of Microbiology, 5724 Ellis Avenue,
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Yackovich, Frank, 45½ North 5th Street, Alle-
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Yoder, Paul E., 448 N. Myrtle, Monrovia, Cali-
fornia

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